F00473

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Field Examination

Field No.

Registry No. F00473

LOCALITY

State California

General Locality San Diego Bay

Sublocality San Diego Bay and Approaches

2001

CHIEF OF PARTY
Kathryn Simmons

LIBRARY & ARCHIVES

DATE March 8, 2002

NOAA FORM 77-28
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

F00473

FIELD NO.

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State California

General locality San Diego Bay

Locality San Diego Bay and Approaches

Scale NA Date of survey Jan. 25 - April 13, 2001

Instructions dated 11/2/00 Project No. OPR-L415-NTR3

Vessel Launch 1212

Chief of party Kathryn Simmons

Surveyed by Kurt Brown, Edmund Wernicke, Kathryn Simmons

Soundings taken by echo sounder, hand lead, pole Echosounder

Graphic record scaled by NTR3

Graphic record checked by NTR3

Evaluation by:
~~Protracted by~~ Russ Davies Automated plot by HP 750C Design Plotter

Verification by Russ Davies

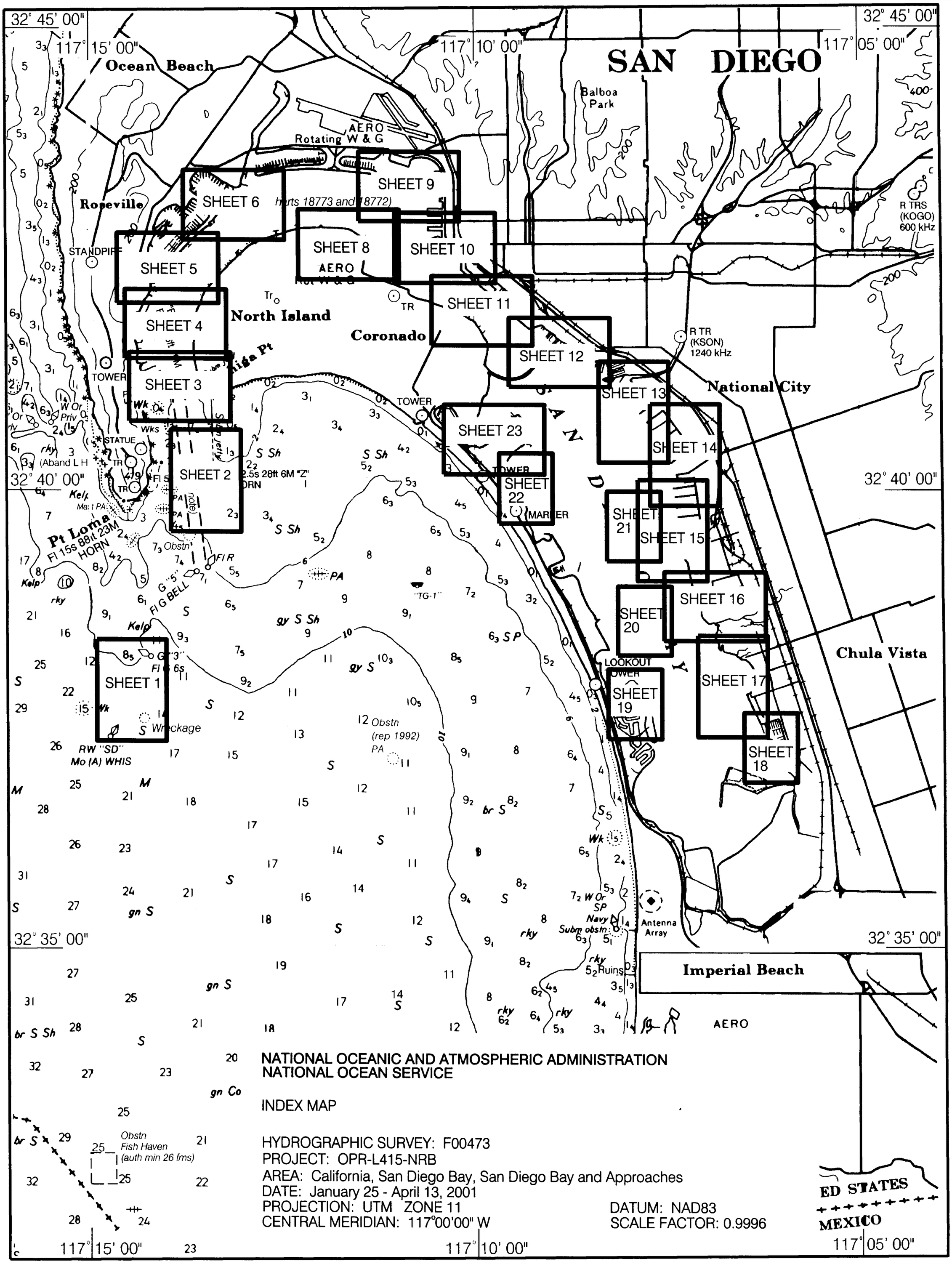
Soundings in ~~fathoms~~ feet at MLW MLLW

REMARKS: Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

All depths listed in this report are referenced to mean lower low water unless otherwise noted.

AWOIS / SURF 3/4/02 MCR

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

INDEX MAP

HYDROGRAPHIC SURVEY: F00473
PROJECT: OPR-L415-NRB
AREA: California, San Diego Bay, San Diego Bay and Approaches
DATE: January 25 - April 13, 2001
PROJECTION: UTM ZONE 11
CENTRAL MERIDIAN: 117°00'00" W
DATUM: NAD83
SCALE FACTOR: 0.9996

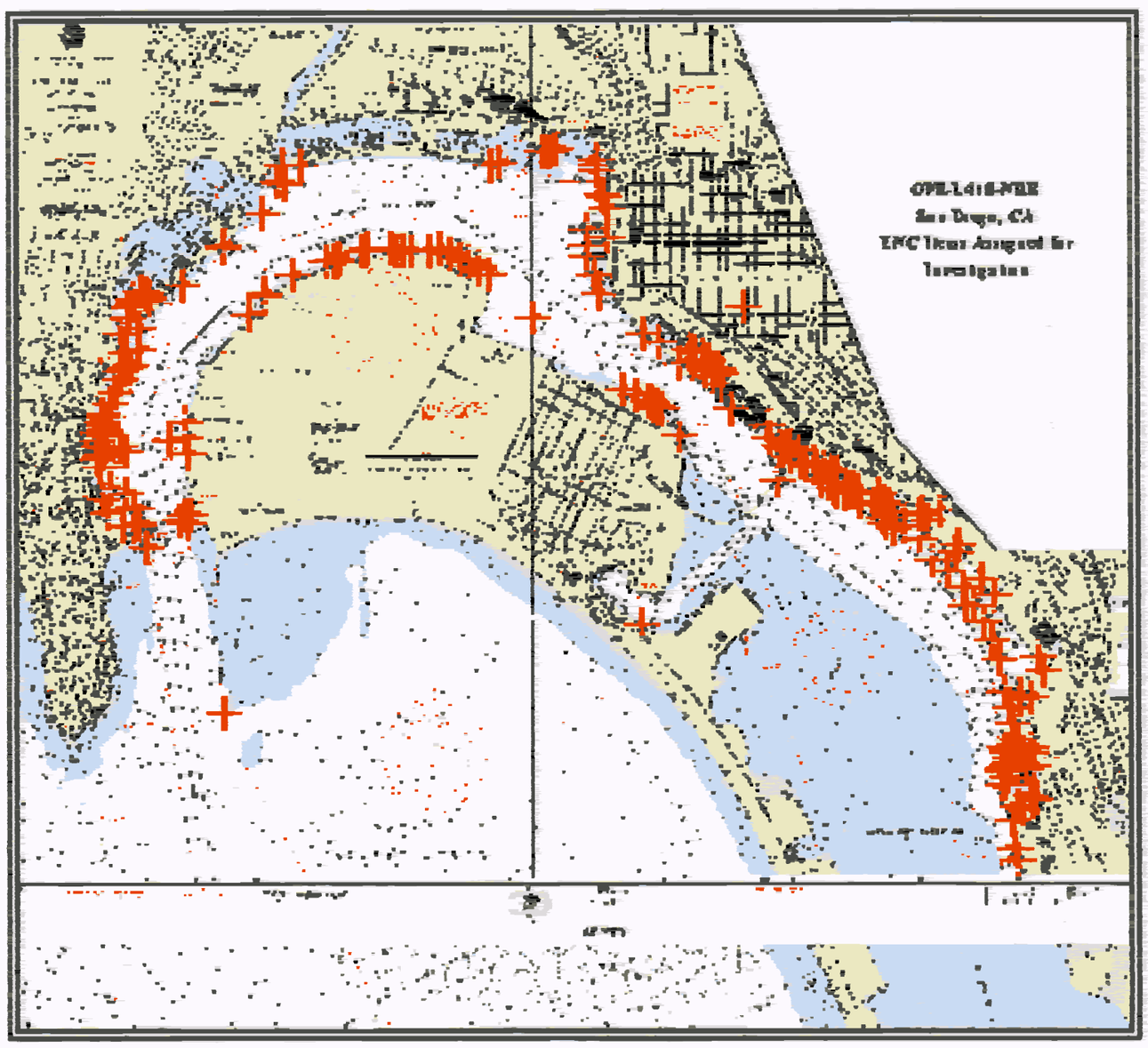
Descriptive Report to Accompany F00473

OPR-L415-NRT3
2000
Navigation Response Team 3

A. AREA SURVEYED ✓

This field examination was conducted in accordance with Port Instructions OPR-L415-NRB, San Diego Bay and Approaches, California. F00473 includes electronic navigation chart (ENC) data, and detached positions.

ENC data and detached positions were collected along the shoreline of San Diego Bay as shown in the following graphic.



ENC data acquisition was conducted from ~~December 8, 2000 (DN 342)~~ JAN. 25, 2001 (DN 25) through April ~~17~~ 13, 2001 (DN 107).

B. DATA ACQUISITION AND PROCESSING

B1. Equipment and Vessels

NOAA Launch 1212, a 27-foot SeaArc, was used for the majority of point data collection, and collection of all detached positions. The 4.5-ton launch is eight feet wide, has a static draft of 0.4 meters and is powered by two 150-hp outboards. No changes to the standard vessel sounding configuration were necessary. The launch is equipped with a Dell Pentium II PC running Coastal Oceanographic's Hypack software, version 5.0. The echosounder is an Innerspace 448 (s/n 263).

NOAA's HPTools (version 10.9.1) and HPS were used for detached position data processing.

Differential GPS data were collected using the following equipment:

Equipment Location	Type Receiver/Antenna	Receiver Serial No.	Antenna Serial No.
VN 1212	Trimble DSM212L 27207	0220164491	0220166460
Backpack	Trimble TSC1	224011684	220187539

Trimble TSC1 data logger and Asset Surveyor software version 5.00 were used for ENC vector data collection. Pathfinder Office 2.51 and Mapinfo (version 6.0) were used for processing.

B2. Quality Control

Point data and line data were evaluated by comparison to the chart, to IKONOS satellite imagery, and to feature drawings prepared in the field. Where multipathing is known to occur; i.e., under bridges or other obstruction, points were examined with more rigorous attention. Positions significantly inconsistent with the above sources were deleted.

In order to achieve higher accuracy of the satellite imagery, Remote Sensing Division (RSD) selected ground control points for georeferencing the image. NRT3 collected vector data on each point and submitted the point data to RSD. RSD subsequently selected check point locations and vector data on these points were collected and submitted as well. The updated imagery was received from RSD and used for chart comparison and for extrapolating shapes of cultural and other shoreline features for the shapes layer. Toward the end of the project NRT3 submitted to RSD all point data collected to date; the imagery was again geo-referenced using the additional points. RSD's accuracy assessment for the revised imagery is included in ~~Appendix V.~~ this report, see letters, dated Sept. 18, 2000 and March 13, 2001

B3. Corrections to Echo Soundings

NA

C. VERTICAL AND HORIZONTAL CONTROL

Tides and Water Levels

Port Instructions define six tide zones within the project area. The tide corrector values referenced to the primary tide station at San Diego, CA (941-0170) are provided in the zoning file "N411NRT32000CORP" which is included on the project CD. See TIDE NOTE, dated June 26, 2001 for final zones and approved correctors.
Preliminary, six-minute real tides recorded at this station were downloaded from the NOAA, NOS, CO_OPS web site (http://www.opsd.nos.noaa. gov/cgi-bin/prelimqry.pl). Using the HPTools utility, the tides were imported into HPS Tide Table 1. Zone Utilities computed the appropriate zone for each sounding; time and height adjustments were computed; and corrected tides were applied to sounding data.

Horizontal Datum

The horizontal control datum for this project is North American Datum of 1983 (NAD83).

Position Control

For ENC data collection, differential correctors were provided by Racal Landstar via the Trimble receiver. For detached positions, differential GPS (DGPS) provided control. The U.S. Coast Guard beacons at Point Loma, CA (302 kHz) and Vandenburg Air Force Base, CA (321 kHz) were used.

Velocity of Sound

Five velocity casts were conducted for the project as shown in the table below:

Cast No/Day	Latitude/Longitude	Depth(m)	Location
1 /025	32°42'04"N / 117°14'01"W	26.3	San Diego
2 /040	32°39'33"N / 117°13'37"W	25.2	San Diego
3 /067	32°37'31"N / 117°16'05"W	55.0	San Diego
4/079	32°37'12"N / 117°15'21"W	47.8	San Diego
5/103	32°38'30"N / 117°13'46"W	22.9	San Diego

Corrections for speed of sound through the water column were computed from data obtained with a Seacat conductivity, temperature and depth recorder. Sea-Bird Electronics Model SBE-19, S/N 1892, was used for all casts. NOAA VELOCWIN software was used to initialize the recorder as well as to process all casts.

Appendix E* contains the calibration report for Seacat instrument S/N 1892.

D. RESULTS AND RECOMMENDATIONS

D1. Chart Comparison

The survey area is represented on the following charts:

Chart No.	Date	Edition	Scale
18772	August 1, 1998	48th	1:20,000
** 18773	July 29, 2000	37th	1:12,0000

** New Edition 38th Ed, dated July 28, 2001

ENC DATA and Detached Positions - (Chart 18773)

ENC data were collected on items throughout San Diego Bay. Some items were new features; others were items inaccurately depicted on the chart or items that showed a shift in position. Initially, each item was assigned an ENC number by HSD according to the type of feature (piers, wharfs, lights, etc.). When multiple points were acquired on a single feature, letters were added to its ENC number for clarity; e.g., 301a, 301b, ...etc. Features positioned but not assigned were arbitrarily numbered by NRT3 but collected using the type/series system.

Detached positions were used primarily to position buoys and private aids, and for disproval of various shoreline features. These are plotted on Mapinfo layer Featr01; see remarks label for purpose of the detached position.

All ENC data were plotted in Mapinfo. ENC data were imported into tables created for each day and ENC series; e.g., 300feb04.tab, 400feb04.tab.... A single table for each ENC series was created and the daily data were accumulated into its respective series table; e.g., SanDiego300.tab. Finally, a single layer containing all ENC data points was created : allitems.tab. (The allitems table is supplemental since it does not retain the detail of each series table.) A shapes layer, SanDiegoShapes.tab, was created based on the data points, supplemented by field drawings, IKONOS imagery and digital photos . The shapes layer is the hydrographer's final representation of the item as it should be charted. An ENC Notes layer was created to clarify the shapes layer where necessary.

ENC positioning on fenders under the Coronado Bridge in San Diego Bay was problematic due to multipathing and obstruction of the differential radio link. All positions were examined closely and doubtful positions were deleted. Successful positions were acquired on several fenders but primarily on the south side. The State of California Department of Transportation was contacted for plan drawings. There were provided by Bob Dougherty, Resident Engineer (619-758-9679) ~~and are included in Appendix V~~. and these plan drawings were sent to N/CS26.

The basin formerly occupied by Campbell Shipyards centered at latitude 32°42'10"N, longitude

* Filed with the hydrographic data

117°09'40"W, is contaminated and undergoing reclamation . Ruins initially positioned (DN 043) have been removed At the time of this report the charted piers (and barge) have also been removed. The ramps remain. Paul Brown, Environmental Services Department, Port of San Diego (619-686-6597) reported that divers have investigated and confirmed that all submerged items have been removed. New hydrography was acquired by the Port where the piers had been. See H-11015. See Evaluation Report, section O and letter, dated April 17, 2001 which is attached.

A new Navy wharf is being constructed on the north side of North Island from approximate latitude 32°42'49.5"N, longitude 117°11'30.1"W to latitude 32°42'41.5"N, longitude 117°17.5"W. A CD containing the Navy's construction drawings ~~accompanies this report~~. were forwarded to N/CS26.

Two magnetic silencing ranges at the entrance to San Diego Bay are no longer active, and have been removed. A new range has been added to the south. Positions for the new range were obtained from Phil VanDeniele, US Navy, (619-553-7065), and are included in ~~Appendix V~~ this report along with an annotated chartlet identifying the removed, active and new ranges. Chart magnetic silencing ranges as shown on the ~~Mapinfo shapes layer~~. smooth sheet.

Dangers to Navigation

~~Two~~ Three dangers to navigation were located. Reports are included in ~~Appendix~~ I. This report

AWOIS Items ✓

See Descriptive Report to accompany H-11015.

D2. Additional Results ✓

The following aids to navigation were positioned with the Trimble DGPS receiver to one-meter accuracy:

Navigational Aid	LL N	Latitude	Longitude
SD Bay Entrance Range Front Light	1500	32°42'17.945"N	117°14'01.291"W
SD Bay Entrance Range Rear Light	1505	32°42'35.532"N	117°14'03.067"W
SD Bay Zuniga Jetty Light Z	1520	32°40'00.822"N	117°13'23.160"W
SD Bay Shelter Island Light S	1640	32°42'55.309"N	117°13'22.224"W
SD N. Island Shallow Water Habitat Light A	1616	32°42'08.789"N	117°13'33.442"W
SD N. Island Shallow Water Habitat Daybeacon B	1617	32°42'11.990"N	117°13'31.912"W
SD N. Island Shallow Water Habitat Daybeacon C	1618	32°42'14.260"N	117°13'29.564"W
SD N. Island Shallow Water Habitat Light D	1619	32°42'17.020"N.	117°13'26.626"W
SD Bay N. Island Light NW	1635	32°42'29.860"N	117°13'11.593"W
SD Bay North Island Light N	1705	32°42'50.792"N	117°12'33.246"W

* Filed with the hydrographic data

Navigational Aid	LL N	Latitude	Longitude
Glorietta Bay Channel Range Front Light	1875	32°40'35.161"N	117°10'08.936"W
Glorietta Bay Channel Range Rear Light	1880	32°40'33.800"N	117°10'10.858"W
SD Bay Ballast Point Light B	1570	32°41'10.720"N	117°13'58.015"W

note: revised positions for LLN 1616 charted at latitude 32°42'08.8"N, longitude 117°13'30.1"W, and LLN 1619 charted at latitude 32°42'15.9"N, longitude 117°13'23.1"W.

Move light QY "A" charted at latitude 32°41'38.1"N, longitude 117°09'51.3"W to new position at end of pipe (position 13996).- lat. 32/41/38.813N; long. 117/09/50.573W

Selected buoys and private aids were positioned with hydrographic DGPS and are plotted on Featr01.tab.

See EVAL Report, section Q for additional results.

E. APPROVAL SHEET ✓

Standard field surveying and processing procedures were followed in producing this survey in accordance with the Navigation Response Branch Operations Manual, the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual.

The data were reviewed daily during acquisition and processing.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Approved and forwarded,

Kathryn Simmons
Navigation Response Team 3

Danger to Navigation Report

Hydrographic Survey Registry Number: **F00473**

Survey Title: **State:** California

Locality: San Diego Bay

Sub-locality: San Diego Bay and Vicinity

Project Number: OPR-L4415-NRT3

Survey Dates: January 25 - April 13, 2001

Depths are reduced to Mean Lower Low Water using verified tides. Positions are based on the NAD83 horizontal datum.

CHARTS AFFECTED:

Chart	Scale	Edition	Date
18773	1:12,000	38th	July 28, 2001

DANGERS:

Feature	Depth	Latitude	Longitude
Wreck	uncovers 4 ft	32/39/31.8N	117/07/07.8W
Wreck	submerged	32/39/39.2N	117/07/56.5W
3 Wrecks(centered at)	submerged	32/39/30.8N	117/07/43.2W

COMMENTS: A limit line was drawn to enclose the approximate location of the three wrecks centered at latitude 32/39/30.8N, longitude 117/07/43.2W.

Click here for chartlet.

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at (206) 526-6836.

Compiled by NRT3; checked by PHB

file:\f00473dton1.wpd

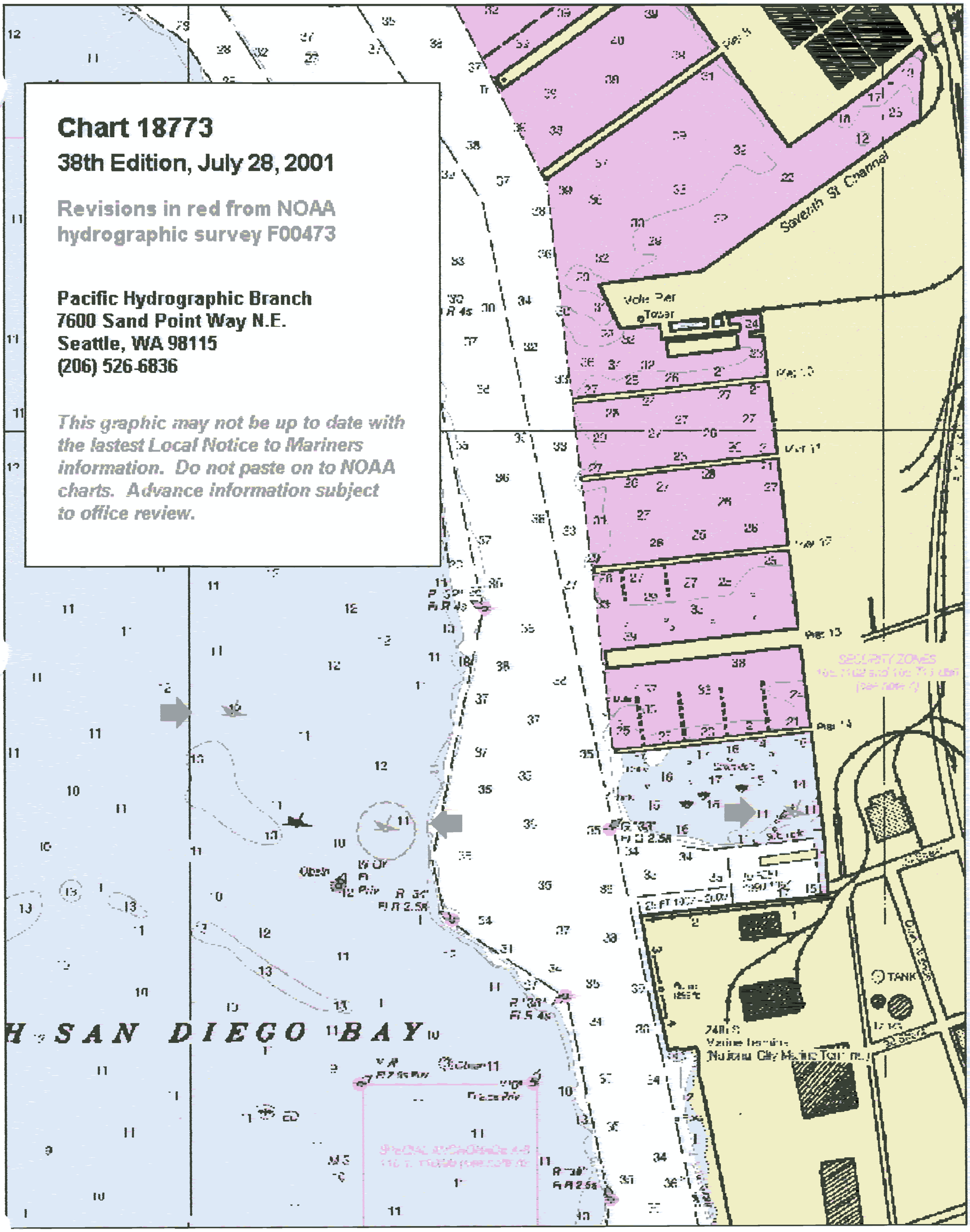
Chart 18773

38th Edition, July 28, 2001

Revisions in red from NOAA hydrographic survey F00473

Pacific Hydrographic Branch
7600 Sand Point Way N.E.
Seattle, WA 98115
(206) 526-6836

This graphic may not be up to date with the lastest Local Notice to Mariners information. Do not paste on to NOAA charts. Advance information subject to office review.



Subject: RE: San Diego Channel Navigational Chart; "Requested Information "
Date: Thu, 12 Apr 2001 10:35:36 -0700
From: "Dye, John M (EFDSW)" <DyeJM@efdsw.navfac.navy.mil>
To: "Perry, Charles L (EFDSW)" <PerryCL@efdsw.navfac.navy.mil>,
"'Kathryn.Simmons@noaa.gov'" <Kathryn.Simmons@noaa.gov>
CC: "Muslin, Daniel (EFDSW)" <MuslinD@efdsw.navfac.navy.mil>,
"'ken.forster@noaa.gov'" <ken.forster@noaa.gov>,
"'gerry.wheaton@noaa.gov'" <gerry.wheaton@noaa.gov>

Kathryn
Hope the information we provided you yesterday helps to complete your survey. The NAB Enhancement site is somewhat confusing. When you plot the rock dike and navigational piles please give us a call. The US Coast Guard, San Fransico Office confirmed they will be providing the solar lights/platforms on the three piles located at enhancement site. The lights will be installed by mid Sept 01.
I will also send you information on the CVN Carrier project P-700A; dredging and wharf placement prior to July 01.
Per our conversation last week I have reviewed the dredging surveys for P-549/700 Carrier Turning Basin. I have not found the -46 mllw spot on the survey drawing. The Navy agrees with an average of -49' mllw depth in the turning basin, based on siltation and the current survey data. The majority of the turning basin is much deeper than -50' mllw but their are areas with -49'mllw.
Let us know if there is anything further required too complete?publish0 the Channel Chart.
v/r
john d
ROICC Coronado
619-545-5248
619-965-0237 pager
619-545-2252 fax

-----Original Message-----
From: Perry, Charles L (EFDSW)
Sent: Wednesday, April 11, 2001 10:38 AM
To: 'Kathryn.Simmons@noaa.gov'
Cc: Dye, John M (EFDSW)
Subject: FW: Amphibious Base

Kathryn,

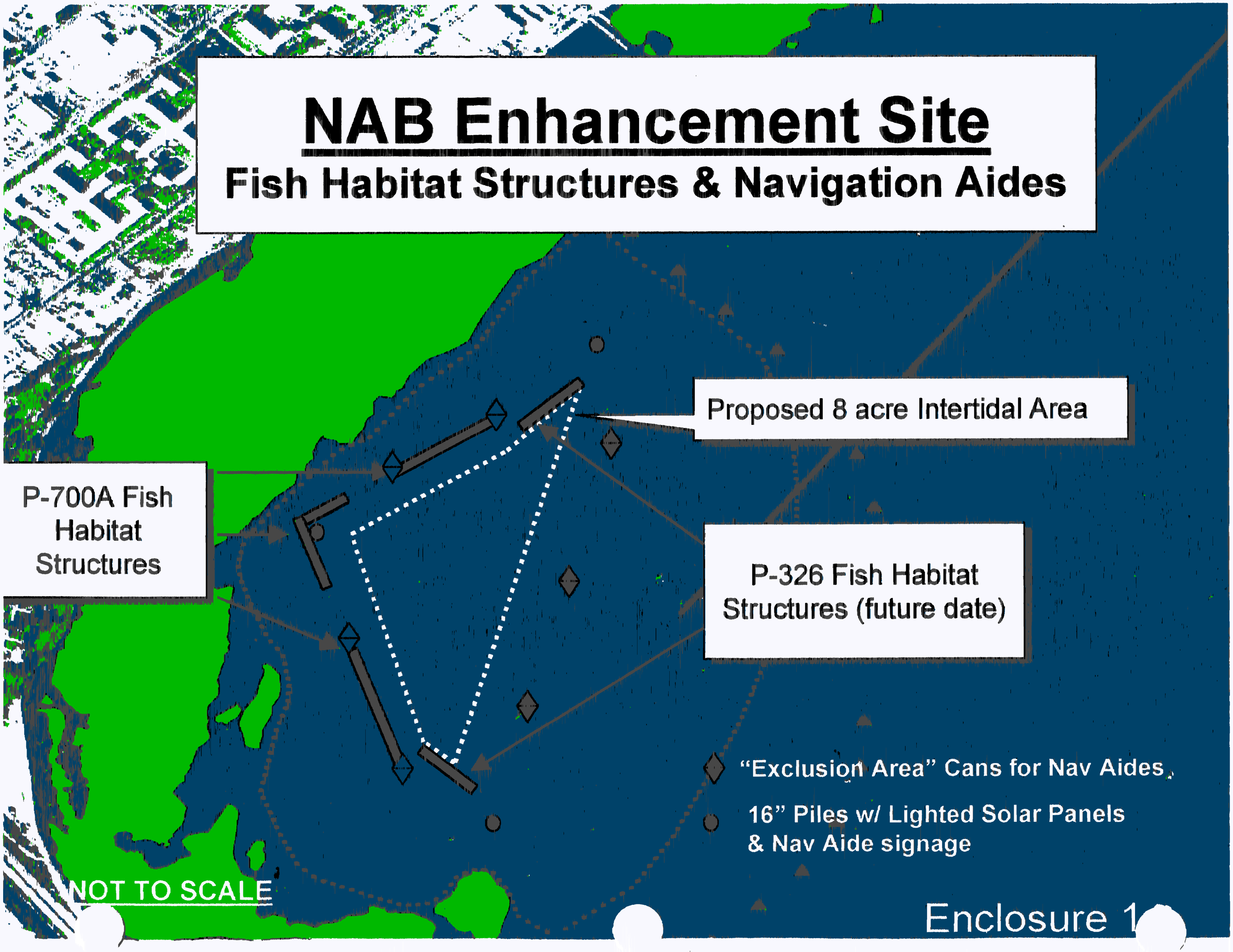
Here is the jpeg that you sent with the corrections to the piers. The new pier shown on the figure is not to scale. I have also attached a power point slide showing the enhancement site south of NAB. Please include the nav-aid piles and the rock dike on the next chart. They are permanent structures.

v/r
Charles

-----Original Message-----
From: Dye, John M (EFDSW)
Sent: Wednesday, April 11, 2001 10:06 AM
To: Perry, Charles L (EFDSW)
Subject: FW: Amphibious Base

NAB Enhancement Site

Fish Habitat Structures & Navigation Aides



Enclosure 1

Kathryn.Simmons

To: Susan Vidal
Subject: RE: IKONOS

-----Original Message-----
From: Susan Vidal [mailto:Susan.Vidal@noaa.gov]
Sent: Tuesday, March 13, 2001 11:15 AM
To: Kathryn Simmons
Subject: Re: IKONOS

Kathryn-
Many thanks for the GPS points- they were very useful. It seems as if each time we try to
come up with simple rules for georeferencing, we run into some kind of unexpected situation. I think we've figured out what was happening with the San Diego images.

Here's what happened:
1. Our initial GPS based georeferencing was based on the few control points we asked you for.
2. We followed the general remote sensing rule of trying to get the RMS errors (reported by
the software) below one pixel. We were able to do this with a first order polynomial transformation by leaving out one GCP from each image set. (What we didn't know at the time
is although this makes the RMS errors reported by the software lower, it can make the actual errors (when you compare the image with GPS ground check points) greater).
Our initial error assessment (using your check points) contained a couple of mistakes
hat we made in choosing the pier corners, which gave us an inaccurate accuracy assessment. This is what your first email with the screen shots of piers pointed out.
4. We decided to georeference again to see if the errors could be reduced by using more control points. We used all the original control points, plus the check points (we were very careful to check the pictures and drawings to make sure that the correct points were being used!). This time we used the same set of points but georeferenced twice:
Once using a first order polynomial transformation (usually preferable)- this yielded
higher RMS errors reported by the software.
Again, using a second order polynomial transformation (this "warps" the image somewhat)- this yielded lower RMS errors reported by the software.
5. The real test of the accuracies of these georeferencing attempts was when we used the additional GPS points to check each image and each transformation method. We only used points we were sure of as far as location.
6. The results show that in each case, it is better to use more control points and use a first order polynomial transformation (although the accuracies were very close for both images and methods).
7. Here are the accuracy assessment numbers:
Image #1 (lower San Diego Bay), first order polynomial transformation
91 points were used to check accuracy
RMS X: 1.50m
RMS Y: 1.30m
Total RMS: 1.98m

Image #1 (lower San Diego Bay), second order polynomial transformation
91 points were used to check accuracy
RMS X: 1.55m
RMS Y: 1.32m
Total RMS: 2.04m

Image #2 (San Diego Bay entrance), first order polynomial transformation

50 points were used to check accuracy
RMS X: 1.37m
RMS Y: 1.58m
Total RMS: 2.09m

  age #2 (San Diego Bay entrance), second order polynomial transformation
50 points were used to check accuracy
RMS X: 1.55m
RMS Y: 1.99m
Total RMS: 2.52m

I'm in the midst of several other tasks right now, but I'll try to get the improved images to Mike R. so he can send them to you in the next few days.

Thanks again (for the GPS data, and for pointing out the problems you found with the imagery)
Susan

DRAFT

NOAA/National Ocean Service
National Geodetic Survey

R E MO T E S E N S I N G D I V I S I O N
M I N U T E M E M O

September 18, 2000

To: Memorandum for the Record

From: Brian M. Baldwin, Senior Cartographer,
Requirements Branch

Subject: Analysis of San Diego Bay for the Electronic Nautical Chart program

Message: My analysis of San Diego Bay using Ikonos imagery and Nautical Chart 18773 was completed on this date. Two Ikonos satellite images were used to make this analysis, they are:

Source Image ID: 2000080918153870000010112461
Acquisition Date/Time: 2000-08-09 18:15 and

Source Image ID: 2000081718071400000010119162
Acquisition Date/Time: 2000-08-17 18:07

Together these two images cover all of the bay shoreline shown on Nautical Chart 18773.

The satellite images were georeferenced to T-sheets T-11879-2, T-11880, T-11882-2, and T-11892-2 and reprojected into the UTM84, zone 11 coordinate system using Erdas Imagine geographic imaging software.

Because no vector copy of the Electronic Nautical Chart shoreline for San Diego Bay was forthcoming the digital raster version of Nautical Chart 18773 (paper chart edition 37, paper chart correction date 07/29/2000, Raster chart image edition 02) was used for comparison to the satellite imagery. An e-mail assurance from Mike Brown of the MCD ENC Branch confirms that the ENC is the same as the nautical chart.

Two hundred sixty eight (268) discrepancies between the satellite imagery and the nautical chart were found.

The nature of these discrepancies is generally that of position, shape, and length of piers. At the area of the Navy Pier there are positional discrepancies on the order of twelve meters, as measured from the satellite imagery. There are significant shoreline changes at the Navy base on North Island and at the

Americas Cup Harbor. Many charted ruins, dolphins, piles, or submerged objects are not visible on the satellite imagery. Additionally many of the major road intersections shown on the chart do not match the imagery. Discrepancies are not located in any one part of the harbor, though they tend to be concentrated around all pier areas.

There are many significant differences in shoreline and depiction of piers between the T-sheets used to georeference the imagery and the imagery itself. The T-sheets were compiled from aerial photographs taken in 1966 so it is small wonder that there is a lot of change.

The imagery was not clear enough to check that all charted landmarks are visible.

I recommend that a complete recompilation of the San Diego Bay be undertaken to ensure that all piers are properly positioned and that the shoreline is accurately depicted. Additionally, if the shoreline from the 1966 aerial photos is what RSD has in its Digital Shoreline Database, a complete recompilation using modern aerial imagery is warranted.

The Imagine files I created to complete this analysis are available to the Applications Branch on the computer Omaha at: RSD/AB/CSCAP/San Diego. Please let me know when they have been downloaded so I can delete them from that computer.

Cc: N/NGS3 - Aslaksen
N/NGS31 - Vidal
N/NGS32 - Allen
N/NGS33 - Rodkey
N/CS26 - Preston

From "Perry, Charles L (EFDSW)"
Date Wednesday, April 11, 2001 10:38 am
To "'Kathryn.Simmons@noaa.gov'"
Cc "Dye, John M (EFDSW)"
Subject FW: Amphibious Base
Attachments fish structures nav aids.ppt

Kathryn,

Here is the jpeg that you sent with the corrections to the piers. The new pier shown on the figure is not to scale. I have also attached a power point slide showing the enhancement site south of NAB. Please include the nav-aid piles and the rock dike on the next chart. They are permanent structures.

v/r
Charles

-----Original Message-----
From: Dye, John M (EFDSW)
Sent: Wednesday, April 11, 2001 10:06 AM
To: Perry, Charles L (EFDSW)
Subject: FW: Amphibious Base

Charles
could you update navy piers dwg. Then return email to Kathryn.
thanks
johnd

-----Original Message-----
From: Kathryn Simmons [mailto:Kathryn.Simmons@noaa.gov]
Sent: Monday, April 09, 2001 2:36 PM
To: DyeJM@efdsw.navfac.navy.mil
Subject: Amphibious Base

John, would you mind looking at the attached jpeg of the Navy's amphibious base. The chart shows a number of features which are not now visible as well as some submerged features. Could you identify features that have been removed and indicate whether or not all supporting structures have been pulled out.

Also, have you submitted to NOAA drawings of the new construction near the carrier wharf? If not, do you have drawings you could send to us for submission with the rest of our data?

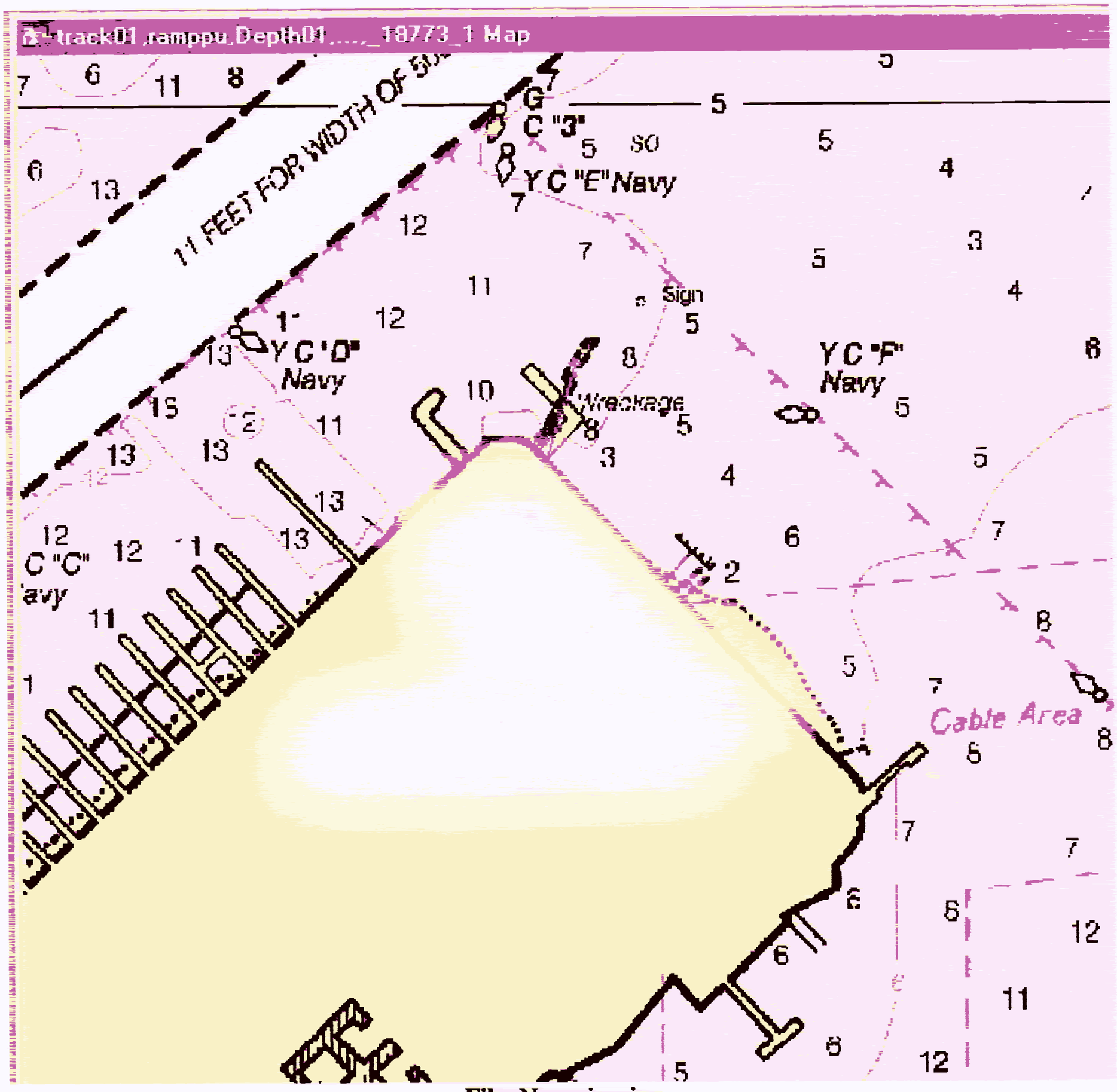
Thanks for your help.

Kathryn

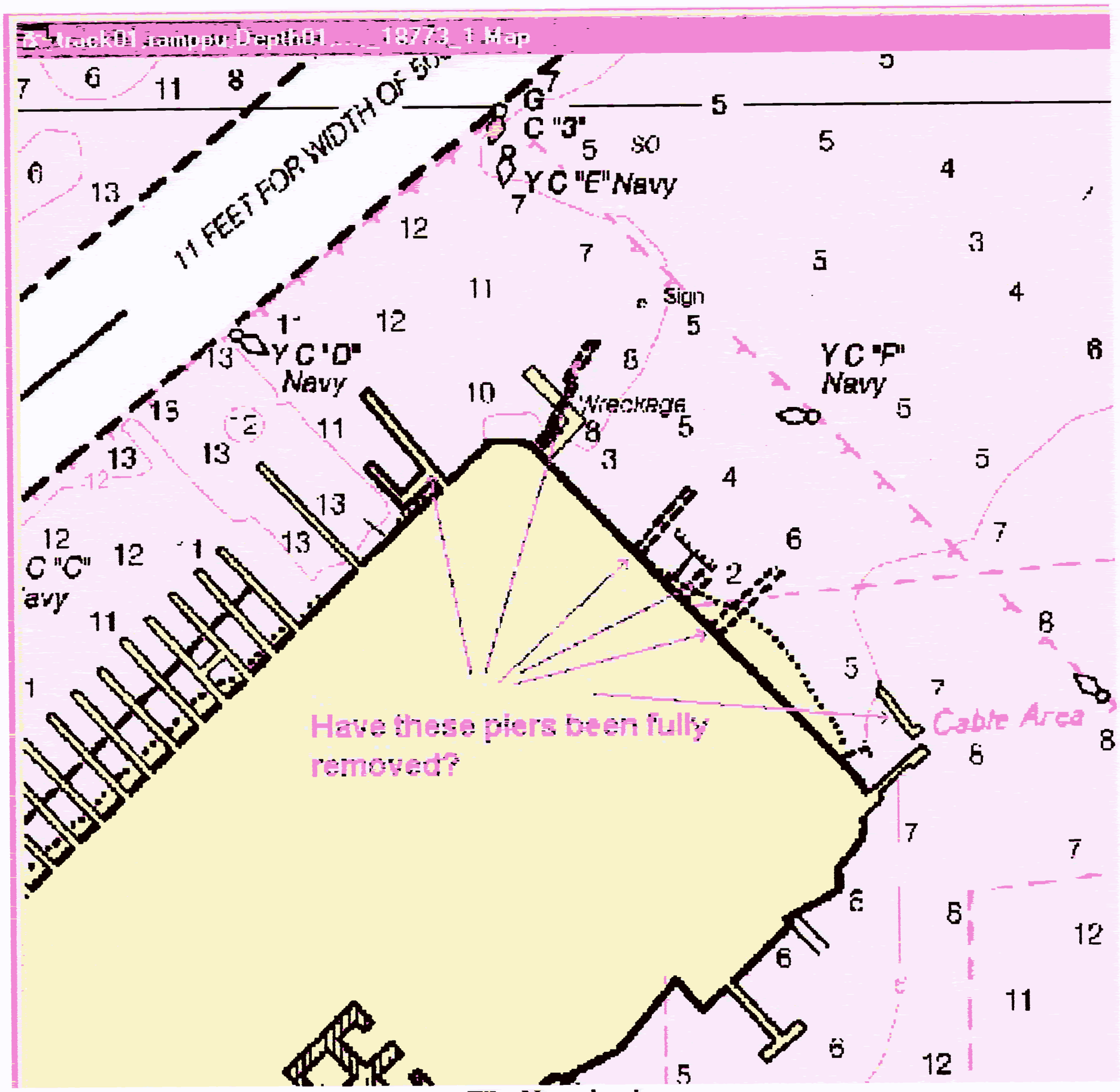
Kathryn Simmons

Team Leader
NOAA, Navigation Response Team 3
1839A Water Street
San Diego, CA 92113

Phone: 619-239-4787
FAX: 619-239-4789
email: Kathryn.Simmons@noaa.gov



File: Navypiers.jpg



File: Navypiers.jpg

From "Labrador, Soliman R (EFDSW)"

Date Tuesday, April 24, 2001 8:26 am

To "'Simmons, Kathryn - NOAA'"

Cc "Dye, John M (EFDSW)" , "Perry, Charles L (EFDSW)" , "Muslin, Daniel (EFDSW)" , "Gladue, Art l (PWCSD 53)"

Subject FW: More questions NOAA @ Naval Station San Diego

Kathryn,

Sorry for the late response, but to answer your questions, Yes, the submerged piers and dolphins as shown on the sketch have been removed. There is also an upcoming Navy project to demolish Piers 10 and 11 at Naval Station San Diego and construct a new pier in the same vicinity. Dredging info will be provided your office upon completion.

On a similar note, can I get your mailing address? I have some hydrosurveys of Naval Station's Pier 3 after a recent dredging project that I would like to forward. If you're not the POC for this, could you please provide the NOAA POC and phone number/email?

Let me know if you have any questions.

/r,
Soliman Labrador, P.E
NAVFAC Southwest Division
South Bay AFT
2585 Callagan Hwy, Bldg. 99
San Diego, CA 92136
(619) 556-9898
(619) 556-8929 fax
LabradorSR@efdsw.navfac.navy.mil

-----Original Message-----
From: Dye, John M (EFDSW)
Sent: Wednesday, April 18, 2001 9:29 AM
To: Labrador, Soliman R (EFDSW); Perdue, Mitchell A (EFDSW); 'aalcorn@moffattnichol.com'
Cc: Perry, Charles L (EFDSW); Kito, Melanie R (EFDSW); Muslin, Daniel (EFDSW)
Subject: FW: More questions NOAA @ Naval Station San Diego

<> Soliman
Could you plz help Kathryn (NOAA) with specific questions listed on attachment. She is surveying San Diego Channel to provide current data to NOAA main office. NOAA is schedued to print the San Diego Navigational Chart August 01.
v/r
johnd

-----Original Message-----
From: Kathryn Simmons [mailto:Kathryn.Simmons@noaa.gov]
Sent: Monday, April 16, 2001 1:33 PM
To: DyeJM@efdsw.navfac.navy.mil
Subject: More questions

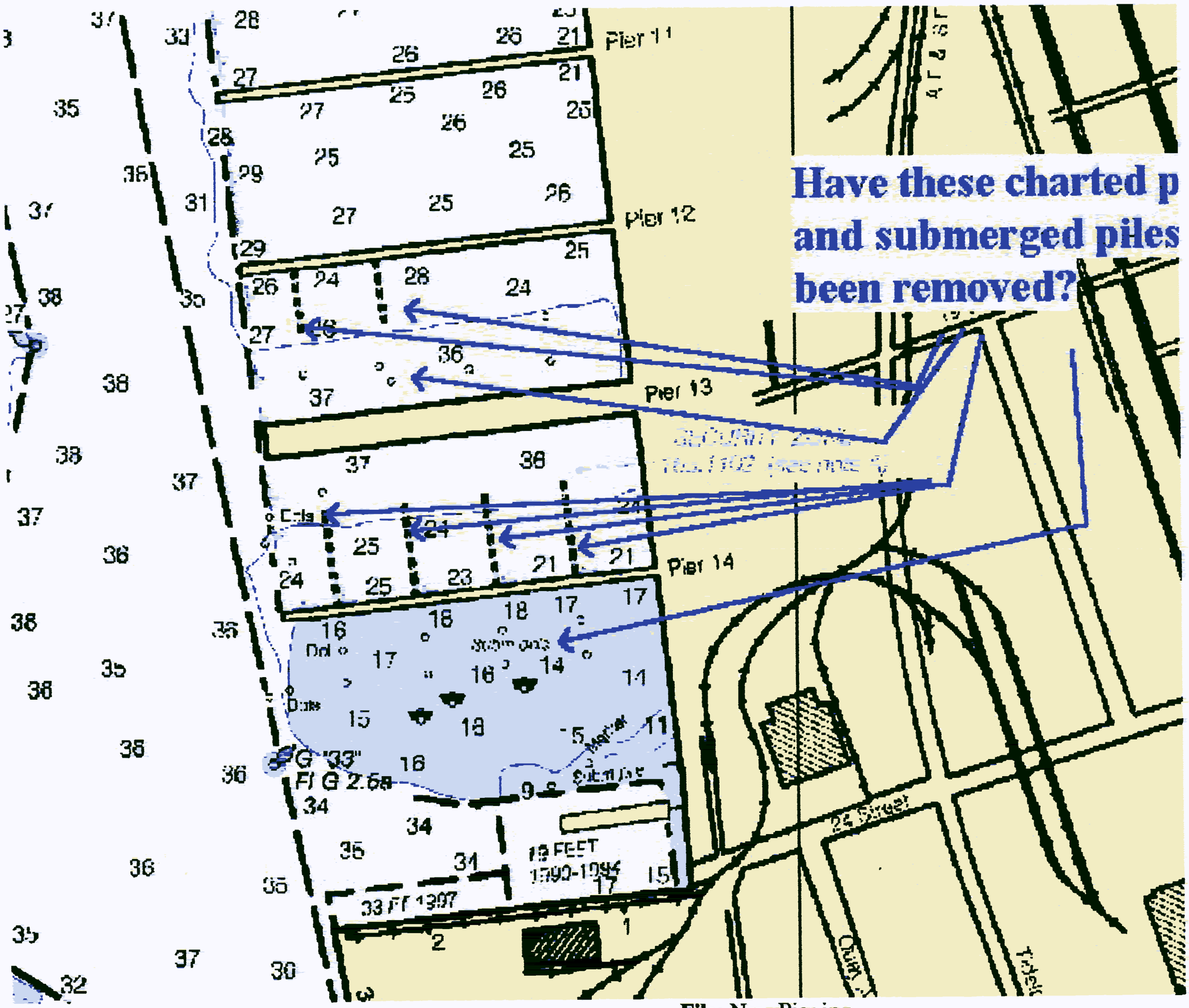
Attached is a chartlet of a section of the Navy facilities in National City. Could you take a look at it and let me know if the charted

submerged piers and dols have been removed.

Thanks.
Kathryn

Kathryn Simmons
Team Leader
NOAA, Navigation Response Team 3
1839A Water Street
San Diego, CA 92113

Phone: 619-239-4787
FAX: 619-239-4789
email: Kathryn.Simmons@noaa.gov



File: NavyPier.jpg

Kathryn.Simmons

From: David M. Bloom [dbloom@ninyoandmoore.com]
Sent: Tuesday, April 17, 2001 12:28 PM
To: kathryn.simmons@noaa.gov
Cc: Paul Brown
Subject: Campbell Bathymetry

bathym_topo.dwg

Attached is the bathymetry for the Campbell Shipyard water-side leasehold,
updated earlier this year by Port District surveyors. Please do not hesitate to call me with any questions you may have regarding this information, or you may call Paul Brown (Port Environmental Services) at 619-686-6597. Thank you.
--
David M. Bloom, Senior Environmental Geologist
Ninyo & Moore
5710 Ruffin Road, San Diego, CA 92123
858/576-1000 ext. 1260
fax: 576-9600
mailto:dbloom@ninyoandmoore.com

Additional Contacts:

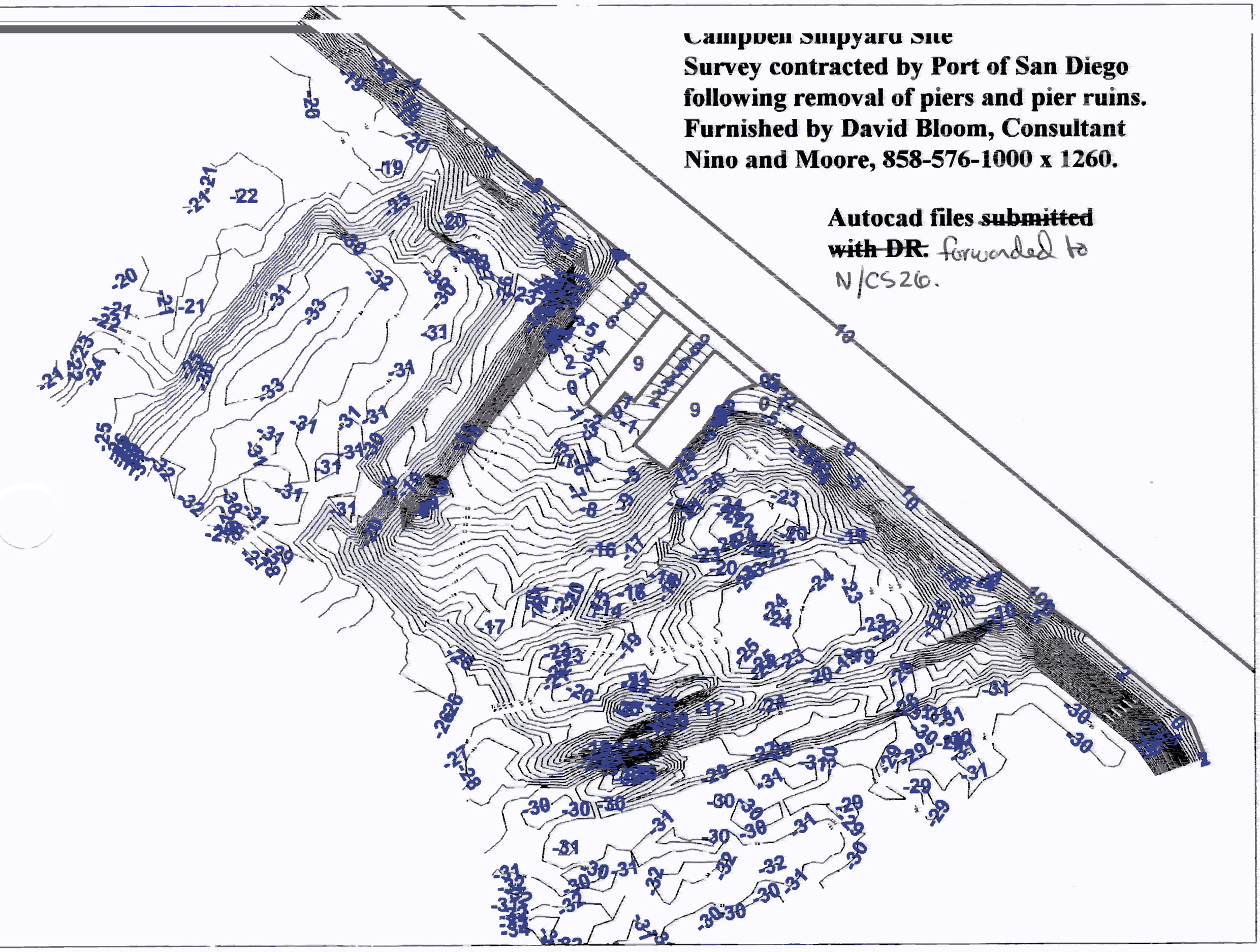
Brad Gerken
Campbell Industries
619-233-7115

Alison Gutierrez
Port of San Diego Environmental Services

M. Tilley
Port of San Diego Engineering
619-686-6414
MTilley@PortofSanDiego.org.

Campbell Shipyard Site
Survey contracted by Port of San Diego following removal of piers and pier ruins. Furnished by David Bloom, Consultant Nino and Moore, 858-576-1000 x 1260.

Autocad files ~~submitted with DR.~~ forwarded to N/CS26.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 26, 2001

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-L415-NRB-2000
HYDROGRAPHIC SHEET: ~~H11015~~ F00473

LOCALITY: Approaches to San Diego Bay, CA
TIME PERIOD: January 25 - April 13, 2001

TIDE STATION USED: 941-0170 San Diego, CA
Lat. 32° 42.9'N Lon. 117° 10.4'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.518 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PAC1, PAC2 & SDB1

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

For ----------
CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final ...al Zoning for OPR-L415-NRB-2... J
Approaches to San Diego Bay, CA - Sheet H11015

SDB1
Time Corrector 0 mins
Range Corrector x0.98
Reference 941-0170

941-0170 SAN DIEGO

PAC2
Time Corrector 0 mins
Range Corrector x0.92
Reference 941-0170

PAC1
Time Corrector 0 mins
Range Corrector x0.93
Reference 941-0170

Final tide zone node point locations for OPR-L415-NRB-2000, Sheet H11015.

Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone PAC1	941-0170	0	0.93
-117.223523 32.684805			
-117.223519 32.682321			
-117.24342 32.665546			
-117.131979 32.58241			
-117.133741 32.615152			
-117.15003 32.650796			
-117.162788 32.667566			
-117.181749 32.682614			
-117.201178 32.691918			
-117.223523 32.684805			
Zone PAC2	941-0170	0	0.92
-118.135425 33.06997			
-117.669108 32.498086			
-117.508065 32.241951			
-117.131979 32.58241			
-117.24342 32.665546			
-117.246588 32.716462			
-117.257538 32.833977			
-117.21671 33.000783			
-117.304443 33.273672			
-117.716297 33.471876			
-118.135425 33.06997			
Zone SDB1	941-0170	0	0.98
-117.24342 32.665546			
-117.223519 32.682321			
-117.223523 32.684805			
-117.201178 32.691918			
-117.197925 32.712918			
-117.196879 32.730121			

-117.20937 32.743192
-117.246588 32.716462
-117.24342 32.665546

NOAA FORM 76-155
(11-72)

U.S DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

F00473

Name on Survey	A ON CHART NO 18773 18772	B ON PREVIOUS SURVEY NO	C ON U S QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P O GUIDE OR MAP	G RAND MCNALLY ATLAS	H U S LIGHT LIST	K	
AMERICAS CUP HARBOR	X		X							1
BALLAST POINT	X		X							2
CALIFORNIA (title)	X		X							3
CHULA VISTA HARBOR	X		X							4
CORONADO (ppl)	X		X							5
CORONADO CAYS	X		X							6
CROWN ISLAND	X		X							7
EAST BASIN	X		X							8
EAST ISLAND	X									9
GLORIETTA BAY	X		X							10
HARBOR ISLAND	X		X							11
NORTH ISLAND	X		X							12
NORTH PACIFIC OCEAN	X		X							13
NORTH SAN DIEGO BAY	X		X							14
SAN DIEGO	X		X							15
SAN DIEGO BAY (title)	X		X							16
SHELTER ISLAND	X		X							17
SILVER STRAND	X		X							18
SOUTH SAN DIEGO BAY	X		X							19
SWEETWATER										20
CHANNEL	X		X							21
ZUNIGA POINT	X		X							22
ZUNIGA SHOAL	X		X							23
										24
										25

Approved: Curtis Cloy

Chief Geographer SEP 17 2001

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
F00473

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	0
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	0

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET			92
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT			21
GEOGRAPHIC NAMES			
OTHER: (Chart Compilation)			38
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS			151

Pre-processing Examination by	*Beginning Date* 09/16/2001	*Ending Date*
Verification of Field Data by R. Davies	*Time (Hours)* 92	*Ending Date*
Verification Check by	*Time (Hours)*	*Ending Date*
Evaluation and Analysis by R. Davies	*Time (Hours)* 21	*Ending Date* 02/04/2002
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 2-20-02

* U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

EVALUATION REPORT

F00473

A. PROJECT

The hydrographer's report contains a complete discussion of the project information.

B. AREA SURVEYED

Twenty-three page-size plots (11"x16" and 8.5"x11") have been generated during office processing. Together they comprise the smooth sheet. See the index sheet attached to the descriptive report behind the Title Sheet.

The survey area is adequately described in the hydrographer's report.

No bottom samples were taken during field operations.

C. SURVEY VESSELS

The hydrographer's report contains adequate information relating to survey vessels.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data was processed using HPS, HPTools, MapInfo and MicroStation 95.

Cartographic codes used to describe the digital data are those authorized by NOS Hydrographic Surveys Specifications and Deliverables, dated June 2000.

The data is plotted using a Universal Transverse Mercator (UTM) Zone 11 projection and are depicted on twenty-three plotter sheets.

E. SONAR EQUIPMENT

Side scan sonar equipment was not used during survey F00473.

F. SOUNDING EQUIPMENT

Sounding equipment has been adequately addressed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

Soundings and elevations have been reduced to Mean Lower Low Water (MLLW) or Mean High Water (MHW) as appropriate with verified tide correctors obtained from NOAA/NOS CO-OPS website. The correctors are zoned direct from San Diego, CA, gage number 941-0170.

H. CONTROL STATIONS

Section C of the hydrographer's report contains adequate discussions of horizontal control and hydrographic positioning.

I. HYDROGRAPHIC POSITION CONTROL

NAD 83 is used as the horizontal datum for plotting and position computations.

Additional information concerning specific control system type, calibrations and system checks can be found in the hydrographer's report and in the separates related to horizontal position control and corrections to position data.

J. SHORELINE

There are no contemporary photogrammetric source data available for this survey. The shoreline in brown on the smooth sheets is for orientation only, and originates with chart 18773, 38th Edition, dated July 28, 2001. The shoreline was digitized in MicroStation during the compilation of the smooth sheet.

There are numerous revisions to the MHW. These changes are depicted with a solid red line on the smooth sheet and are adequate to supersede prior photogrammetric shoreline maps. Other changes, depicted with a dashed red line, originate with IKONOS satellite imagery dated August 9, 2000 and August 17, 2000. The dashed red line denotes an approximate location of the MHW. The quality of the hydrographic positioning was frequently inadequate to depict the shoreline changes with a solid red line. In many instances, the positioning failed to provide sufficient information to tie the newly located shoreline to existing charted shoreline. The cartographer utilized the IKONOS imagery as a guide to fill in these voids. The result of combining the hydrography and photogrammetric information is a usable cartographic depiction of conditions at the time of the survey.

The quality of the MHW depicted with a dashed line is unknown. While it is contemporary with the date of the IKONOS photography and is believed to be reasonably complete it is a simple digitization of raster imagery without proper photogrammetric controls. Use of this information to update nautical charts should only be considered if no other later or better quality source exists.

K. CROSSLINES

There are no crosslines within the survey limits.

L. JUNCTIONS

Survey F00473 junctions with the following survey.

Survey	Year	Scale	Area
H11015	2001	1:10,000	All

The junction with survey H-11015 is complete. A "Joins" note has been added to the smooth sheet.

M. COMPARISON WITH PRIOR SURVEYS

There were no prior survey comparison requirements stated in the Port Instruction for OPR-N411-NRB.

N. ITEM INVESTIGATIONS

There were twenty-five AWOIS items assigned to this project. All are discussed in survey H-11015 descriptive and evaluation reports.

O. COMPARISON WITH CHART

Survey F00473 was compared with the following charts:

Chart	Edition	Date	Scale
18772	46th	August 1, 1998	1:20,000
18773	38th	July 28, 2001	1:12,000

The following charted ruins should be removed from Chart 18773, 38th Edition, July 28, 2001. See attached e-mail dated April 24, 2001 for the disproval source.

Latitude	Longitude
32/39/48.81N	117/07/22.62W
32/39/49.07N	117/07/18.84W
32/39/39.13N	117/07/21.21W
32/39/39.81N	117/07/13.94W
32/39/39.35	117/07/17.58W
32/39/40.28N	117/07/10.41W

The following charted ruins and piers should be removed from Chart 18773, 38th Edition, July 28, 2001. See attached e-mail dated April 11, 2001 for the disproval source.

Feature	Latitude	Longitude
ruins	32/43/14.10N	117/10/26.46W
ruins, centered of	32/40/46.86N	117/09/18.29W
pier	32/40/40.73N	117/09/13.10W
pier	32/40/48.93N	117/09/30.63W

The following charted ruins should be removed from Chart 18773, 38th Edition, July 28, 2001. See attached e-mail dated April 17, 2001 for the disproval source.

Latitude	Longitude
32/42/11.84N	117/09/40.28W
32/42/10.47N	117/09/39.20W
32/42/09.72N	117/09/37.41W
32/42/09.03N	117/09/34.77W
32/42/07.99N	117/09/33.80W

The following charted ruins and pier should be removed from Chart 18773, 38th Edition, July 28, 2001. Matt Merrill, manager of Foss Maritime San Diego (619) 234-8228 reported that the following items no longer exist.

Feature	Latitude	Longitude
ruins	32/41/46.89N	117/09/06.01W
pier/dol	32/41/45.35N	117/09/05.25W
ruins	32/41/44.84N	117/09/04.07W

The following charted ruins and pile should be removed from Chart 18773, 38th Edition, July 28, 2001. Todd Roberts, General Manager of South Bay Boatyard, (619)-427-6999, ext 15 reported that the following items no longer exist. Also see AWOIS item 52636 in descriptive report for survey H-11015.

Feature	Latitude	Longitude
ruins	32/41/56.27N	117/10/05.80W
ruins	32/41/55.51N	117/10/04.07W
pile	32/41/56.79N	117/10/05.01W

The following charted items should be changed from visible to submerged. The hydrographer did not complete a thorough investigation to completely disprove these charted items.

Feature	Latitude	Longitude
pier	32/41/12.19N	117/14/01.35W
pier	32/41/16.15N	117/14/16.02W
group of 5 piers	32/41/20.68N	117/14/18.95W
pier	32/43/19.27N	117/13/10.70W
pier	32/43/18.37N	117/13/06.49W
wreck	32/41/25.74N	117/14/20.94W
wreck	32/41/28.22N	117/14/20.98W

Survey F00473 is adequate to supersede and supplement charted shoreline within the charted area.

b. Dangers To Navigation

There were three dangers to navigation discovered during survey operations. Buoys marking two of the submerged wrecks at latitude 32/39/39.2N, longitude 117/07/56.18W and latitude 32/39/30.8N, longitude 117/07/43.2W, were located but the submerged wrecks were not nor least depth taken. A limit line was drawn to enclose the approximate location of these wrecks. No additional dangers to navigation were found during office processing.

P. ADEQUACY OF SURVEY

The records and reports received for processing are adequate and conform to the requirements of the NOS Hydrographic Surveys Specifications and Deliverables, dated June 2000, Port Instructions OPR-N411-NRB, dated April 19, 2000 and the Navigational Response Branch Operations Manual.

Q. AIDS TO NAVIGATION

Numerous fixed aids are located in the survey area. They were positioned and they adequately mark the features intended. See the descriptive report, section D.2 for a listing and below for additional fixed aids that were not listed in the report but were in the survey records.

Sweetwater Anchorage Light Buoy A has been replaced by a new buoy, "Shoal", at latitude 32/38/43.58N, longitude 117/07/17.62W.

Two white/orange can buoys charted at latitude 32/38/41.64N, longitude 117/07/20.66W and latitude 32/38/43.72N, longitude 117/07/13.85W have been replaced by two fixed aids with white lights and signs "Danger Shoal" at latitude 32/38/41.39N, longitude 117/07/20.00W and latitude 32/38/43.80N, longitude 117/07/14.12W.

There were three new fixed aids accurately located during survey operations at the positions below. The aids are described as a single pile with a white light on top and a white sign "Danger Shoal".

Latitude	Longitude
32/38/10.968N	117/06/50.288W
32/38/12.008N	117/06/55.505W
32/38/13.293N	117/07/03.27W

There were two landmarks that were investigated and found to be incorrectly charted on chart 18773, 38th Edition, dated July 28, 2001. It is recommended that the following landmarks be relocated to the accurate positions listed below. The accuracy to which they were located is also listed.

Landmark	Latitude	Longitude
Flagpole	32/42/29.987N	117/14/05.111W
Gazebo	32/42/20.71N	117/10/04.153W

All other charted landmarks should be retained as charted.

S. MISCELLANEOUS

Miscellaneous information is adequately discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

This is a good ENC survey.

U. REFERRAL TO REPORTS

Referral to reports is adequately discussed in the hydrographer's report.

Russ Davies
Cartographer

APPROVAL SHEET
F00473

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Dennis Hill Date: 2-27-02
Dennis Hill
Chief, Cartographic Team
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

J E Lowell Jr. Date: 2/27/02
John E. Lowell, Jr.
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

Samuel P. DeBow, Jr. Date: March 6, 2002
Samuel P. DeBow.Jr.
Captain, NOAA
Chief Hydrographic Surveys Division

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F00473

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
18773	Oct 4, 2001	Russ [illegible]	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. features from smooth sheet
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.